

REMARKS/ARGUMENTS

Claims 11 and 12 have been amended to improve the clarity of these claims. New claim 13 has been added and recites substantially the subject matter of claims 1 and 2. No new matter has been added.

The Office Action mailed August 11, 2005, has been received and reviewed. Claims 1-12 are currently pending in the application. Claims 1-12 stand rejected. Applicants have amended claims 11 and 12, added new claim 13, and respectfully request reconsideration of the application as amended herein.

Double Patenting Rejection Based on U.S. Patent No. 6,479,148

Claims 1, 4, and 9 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 11 and 17 of U.S. Patent No. 6,479,148. In order to avoid further expenses and time delay, Applicants elect to expedite the prosecution of the present application by filing a terminal disclaimer to obviate the double patenting rejections in compliance with 37 CFR § 1.321 (b) and (c). Applicants' filing of the terminal disclaimer should not be construed as acquiescence to the Examiner's double patenting or obviousness-type double patenting rejections. Attached are the terminal disclaimer and accompanying fee.

Double Patenting Rejection Based on U.S. Patent No. 6,235,359

Claims 1 and 9 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 16, and 17 of U.S. Patent No. 6,235,359. In order to avoid further expenses and time delay, Applicants elect to expedite the prosecution of the present application by filing a terminal disclaimer to obviate the double patenting rejections in compliance with 37 CFR § 1.321 (b) and (c). Applicants' filing of the terminal disclaimer should not be construed as acquiescence to the Examiner's double patenting or obviousness-type double patenting rejections. Attached are the terminal disclaimer and accompanying fee.

35 U.S.C. § 102(e) Anticipation Rejections

Anticipation Rejection Based on U.S. Patent No. 6,711,901 to Canfield et al.

Claims 1-12 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,711,901 to Canfield *et al.* (“Canfield”). Applicants respectfully traverse this rejection, as hereinafter set forth.

Applicants note that the above-referenced application, which was filed on November 25, 2003, is a continuation of Application Serial No. 09/090,256 (filed June 4, 1998), which has issued as United States Patent No. 6,679,965. This parent application claims the benefit of Provisional Application Nos. 60/048,605 (filed June 4, 1997), 60/048,604 (filed June 4, 1997), and 60/048,672 (filed June 5, 1997). As such, the above-referenced application is entitled to an effective filing date of at least June 4, 1998. More specifically, the above-referenced application is entitled to an effective filing date of June 4, 1997, because the parent application claims the benefit of provisional applications filed on that date. In contrast, Canfield was filed on January 19, 2001, and claims priority to Provisional Application No. 60/177,218 (filed January 21, 2000). Since the above-referenced application has an earlier effective filing date than that of Canfield, Canfield can not be considered prior art to the above-referenced application. As such the Examiner’s reliance on Canfield to reject the pending claims under 35 U.S.C. § 102(e) is improper and the anticipation rejection should be withdrawn.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent No. 5,280,706 to Yorgason in View of U.S. Patent No. 4,643,940 to Shaw et al.

Claims 1 and 3-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,280,706 to Yorgason (“Yorgason”) in view of U.S. Patent No. 4,643,940 to Shaw *et al.* (“Shaw”). Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for an obviousness rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or

references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The obviousness rejection of claims 1 and 3-12 is improper because the cited references do not provide a motivation to combine to produce the claimed invention.

Yorgason teaches a composite/metal hybrid rocket motor case that includes a metal shell and a fiber reinforcement. Yorgason at column 1, lines 13-16. The fiber reinforcement is applied to the metal shell, cured, and bonded. *Id.* at column 4, lines 27-42. The fiber reinforcement is a cylindrical liner formed from sheets of a continuous, unidirectional fiber reinforcement bonded with a thermoset or thermoplastic matrix. *Id.* at column 3, lines 39-46.

Shaw teaches a low density, fiber-reinforced resin composite that includes a thermoplastic resin and short reinforcing fibers. Shaw at column 1, lines 41-43. The density of the resin composite depends on the thermoplastic resin and the fibers that are used. *Id.* at column 2, lines 34-39. When the resin composite include a polyolefin matrix and glass fibers, the resin composite has a density of from 0.24-1.04 g/cc. *Id.* The resin composite has a good strength-to-weight ratio, a high flexural stiffness, and good sound and heat insulating properties. *Id.* at column 1, line 66 through column 2, line 7. The resin composite is used as a laminate structure, as a backing for carpet, in automobile interior trim parts, as sound insulation, as a load bearing panel, or as thermal insulation. *Id.* at column 7, lines 3-51.

To provide a motivation or suggestion to combine, the prior art or the knowledge of a person of ordinary skill in the art must "suggest the desirability of the combination" or provide "an objective reason to combine the teachings of the references." M.P.E.P. § 2143.01. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *Id.* (emphasis in original). "[I]t is fundamental that rejections under 35 U.S.C. § 103 must be based on evidence." *In re Lee*, 277 F.3d 1338, 1342 (Fed.Cir. 2002). This evidence "must be based on objective evidence of record." *Id.* at 1343. The Examiner "cannot rely on conclusory statements when dealing with particular combinations of prior art and specific claims, but must set forth the rationale on which it relies." *Id.* at 1345.

As acknowledged by the Examiner, Yorgason does not teach or suggest a density of its fiber reinforcement. Office Action of August 11, 2005, p. 4. Therefore, the Examiner relies on Shaw as teaching this limitation. *Id.* The Examiner states that Shaw “teaches that it is known in the art to manipulate articles such as taught by the primary reference to obtain desired densities” and that “[i]t would have been obvious to one of ordinary skill in the art at the time the invention is made to combine the teachings of the secondary references to Shaw et al and so manipulate the resulting article densities via selecting specific types resin/fibers motivated by the desire to obtain specific densities therefore.” *Id.*

However, the Examiner’s motivation to combine is conclusory and is not based on objective evidence of record. Yorgason and Shaw do not provide the requisite motivation to combine to produce the claimed invention because nothing in Yorgason suggests the desirability of, or provides an objective reason for, producing fiber reinforcements having the recited density range. Rather, Yorgason is completely silent as to a desired density of its fiber reinforcements. Shaw also does not suggest the desirability of, or provide an objective reason for, making other reinforcements, such as the fiber reinforcements of Yorgason, with a density of from 0.24-1.04 g/cc.

The cited references also do not provide a motivation to combine because the proposed modification would render the prior art unsatisfactory for its intended purpose. M.P.E.P. § 2143.01. Combining Yorgason and Shaw would produce a prepreg lacking the properties to be used in a rocket motor because the low density, resin composites of Shaw do not have the resistance to erosion and charring desired in a rocket motor. Rather, the resin composites of Shaw are used in laminate structures, as backing for carpets, in automobile interior trim parts, as sound insulation, as a load bearing panel, or as thermal insulation.

Since the cited references do not provide a motivation to combine to produce the claimed invention, the obviousness rejection of claim 1 is improper and should be withdrawn.

Claims 3-12 are allowable, *inter alia*, as depending from an allowable base claim.

Applicants respectfully submit that new claim 13 is allowable for at least the above-mentioned reasons. Claim 13 is also allowable because the cited references do not teach or suggest all of the claim limitations. Specifically, Yorgason and Shaw do not teach or suggest the limitation of “a pre-preg material comprising a reinforcement impregnated with a carbon

phenolic resin, the composite article having a specific density ranging from approximately 1.00 g/ml to approximately 1.15 g/ml." Neither Yorgason nor Shaw teaches that a carbon phenolic resin is used to impregnate the reinforcement. While Yorgason teaches that its fiber reinforcement includes a thermoset or thermoplastic matrix, Yorgason does not teach or suggest that the matrix is a carbon phenolic resin. Similarly, while Shaw teaches that its resin composite includes a thermoplastic resin, Shaw does not teach or suggest that the thermoplastic resin is a carbon phenolic resin.

ENTRY OF AMENDMENTS AND NEW CLAIM

The amendments to claims 11 and 12 and new claim 13 should be entered by the Examiner because the amendments and new claim are supported by the as-filed specification and drawings and do not add new matter to the application.

CONCLUSION

Claims 1-13 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain that might be resolved by a telephone conference, the Examiner is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,

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